



**AFTLC**  
**BULLETIN**

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# FOREWORD



"Any comments /suggestion and technical information are very much valuable to the editors and AFTLC committee, and would be greatly appreciated."

The bulletin of AFTLC was established with the main objective of revealing of the activity output and impact of AFTLC and AFRLs, and the second objective is to set up a channel of communication between AFTLC's ASEAN member states and also with other committees in ASEAN, as well as experts in the fields. This will be regularly issued every year to show case the activities of AFRLs, and includes advance technology in the fields, as well as comments, suggestions from readers, this can be maintained and be sustained only with the cooperation of the readers.

*ASEAN Food Testing Laboratory Committee  
(AFTLC)*

# ABBREVIATIONS

|                |  |
|----------------|--|
| <b>ACCSQ</b>   | ASEAN Consultative Committee on Standards and Quality  |
| <b>AFRL</b>    | ASEAN Food Reference Laboratory  |
| <b>AFSN</b>    | ASEAN Food Safety Network  |
| <b>AFTLC</b>   | ASEAN Food Testing Laboratory Committee  |
| <b>AMS</b>     | ASEAN Member State   |
| <b>ARASFF</b>  | ASEAN Rapid Alert System for Food and Feed   |
| <b>CRM</b>     | Certified Reference Material   |
| <b>ISO/IEC</b> | International Organisation for Standardisation/<br>International Electrotechnical Commission |
| <b>NFRL</b>    | National Food Reference Laboratory   |
| <b>PFPWG</b>   | Prepared Foodstuff Products Working Group  |
| <b>PT</b>      | Proficiency Testing  |
| <b>RM</b>      | Reference Material   |



# ASEAN FOOD TESTING LABORATORY COMMITTEE



In 2015, ASEAN achieved integration as the ASEAN Economic Community (AEC). The AEC will transform the region into a single market and production base with high competitiveness. While the AEC Blueprint has been implemented as planned and an AEC scorecard has been created to monitor and report the progress of missions conducted for contributing to the economic integration.

## AFTLC

It is acknowledged that an effective food control and safety system is crucial for the protection of consumers' health. Besides, the system is needed in facilitating countries to assure their products' safety and quality. The food control system comprises of several components. An analytical laboratory is considered crucial and essential component of this system. Accordingly, steps have been initiated in accordance with the AEC scorecard to establish several regional food safety facilities, including ASEAN Food Reference Laboratories (AFRLs). This has been overseen by the Prepared Foodstuff Product Working Group (PFPWG) of the ASEAN Consultative Committee on Standards and Quality (ACSSQ). The progress made on setting up the AFRLs is summarized below.

The PFPWG endorsed the establishment of the ASEAN Food Testing Laboratory Committee (AFTLC) and its Terms of Reference in its 14th meeting held in January 2012 in Brunei Darussalam. The primary objectives of AFTLC are to monitor and coordinate the food testing activities in ASEAN. AFTLC has developed the ToRs for the ASEAN Food Reference Laboratories (AFRLs) and process for the establishment of the AFRLs. Nine ASEAN Reference Laboratories (AFRLs), for important specialties namely, GMOs, Food Microbiology, Mycotoxins, Veterinary Drug Residues, Pesticide Residues, Heavy Metals and Trace Elements, Food Additives, Food Contact Materials and Environmental Contaminants have been established. AFRLs are testing laboratories competent in the specific areas of expertise as designated by the PFPWG. They are a part of main infrastructure that supports the effective food control systems.

### Functions of AFTLC

- Monitor, guide and review the establishment and functioning of the AFRL(s)
  - Review and evaluate the application for establishment of new AFRLs
  - Appoint Panel of Experts for the evaluation of proposed AFRL(s)
  - Evaluate the assessment made by the Panel of Experts and make recommendations to the PFPWG for the approval of proposed AFRL(s)
  - Review the functioning of the established AFRL(s) and make recommendations for the sustainability of AFRL(s), where necessary
- Provide support to promote and assure competency of national food testing laboratories of AMS
  - Establish ASEAN food testing methods or their equivalent for prepared foodstuff based on international standards
  - Review and updating existing food testing methods to ensure appropriateness for their intended use
  - Ensure availability of reference testing materials, where possible, through cooperation with existing working groups within ASEAN
  - Facilitate exchange of knowledge and expertise, by serving as a forum for sharing experiences and problems encountered
- Provide support to other regional initiatives related to food safety.
  - Provide technical guidance on laboratory policies and activities to support the food crisis management including ASEAN Rapid Alert System for Food and Feed (ARASFF)
  - Provide support to post market activities related to food and food related testing

- Promote laboratory conformity assessment and accreditation based on international standards and benchmark
  - Coordinate training on international laboratory quality system standards
  - Assist laboratories to be accredited by recognised accreditation bodies based on international standards

## Composition

The AFTLC shall consist of the following:

- The Chair and Co-Chair, representatives from the national regulatory food testing laboratories of ASEAN Member States.
- Representatives from the national regulatory laboratories or laboratories recognized by the authorities, which include representatives from the ASEAN Food Reference Laboratories, from each ASEAN Member State. Due consideration shall be given to nomination of representatives who are directly involved in the food testing activities.
- Observers from the national food safety regulatory authorities.
- Where applicable, resource persons and experts endorsed by the respective Heads of Delegations to provide technical inputs.
- Representative from the ASEAN Secretariat will provide secretariat support to the AFTLC.

The AFTLC may invite, upon approval by the members of the AFTLC, any expert, as a resource person to provide input and facilitate technical discussions.

In addition, Technical Working Groups may be established to carry out the specific tasks of the AFTLC with representation from experts nominated by the AFTLC members. The Technical Working Group will develop a plan of action outlining goals and objectives over an agreed timeline consistent with reporting to AFTLC.

## The ASEAN Food Reference Laboratories (AFRL)

The ASEAN Food Reference Laboratories (AFRLs) shall be established with following objectives

1. To network among ASEAN Member States (AMSs) to support technical issues related to food and food-related testing in ASEAN;
2. To provide technical support to the National Food Reference Laboratories (NFRLs);
3. To provide technical assistance and transfer of knowledge to other food and food-related laboratories in ASEAN;
4. To network with other international and regional reference laboratories for the purpose of exchanging technical information and promoting collaboration.

# AFRL FOR VDR

ASEAN FOOD REFERENCE LABORATORY FOR VETERINARY DRUG RESIDUES

**AFRL FOR VDR**  
**VETERINARY PUBLIC**  
**HEALTH LABORATORY**  
91 MOO 4,  
TIWANONT RD.,  
PATHUMTHANI 12000  
THAILAND

**BUREAU OF QUALITY**  
**CONTROL OF LIVESTOCK**  
**PRODUCT**

**DEPARTMENT OF**  
**LIVESTOCK DEVELOPMENT**

**MINISTRY OF**  
**AGRICULTURE AND**  
**COOPERATIVES**

*Reported by:*  
*Pichaya Phataisit*  
*Naraya Tangsirisap*



## ASEAN FOOD REFERENCE LABORATORY SINCE 2004

The ASEAN Reference Laboratory for veterinary drug residues is the apex facility that has been engaged in ensuring food safety in Thailand as well as in South-East Asia region for more than five years. During this period the laboratory has expanded extensively in term of laboratory capacities and collaboration among ASEAN member states.

The laboratory has a human resource strength of 54, of which 50 are technical professionals with qualifications, skill and experience in Analytical Science, Food Science, Food Safety and Food Technology. This core technical staff is assisted in administrative matters by one management and three supporting staff members.



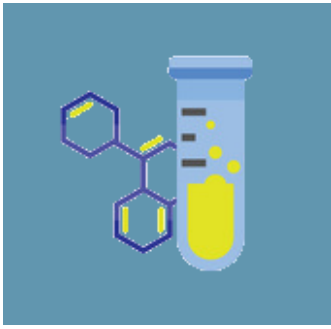


## Capacities and activities

The laboratory is well equipped with ELISA facilities for screening analysis and LC-MS/MS, HPLC-UV, HPLC-FD and LC-QTOF systems for confirmatory analysis. The test methods that are used have been ISO/IEC 17025 accredited by Bureau of Laboratory Quality Standards, Department of Medical Sciences (Thailand Accreditation Body and the WHO Collaborating Centre on Quality System in Laboratories). The latest accreditation was on 26 April 2017. The laboratory has been providing hands-on training and performing as a resource center for food testing laboratory capacity building in ASEAN region.

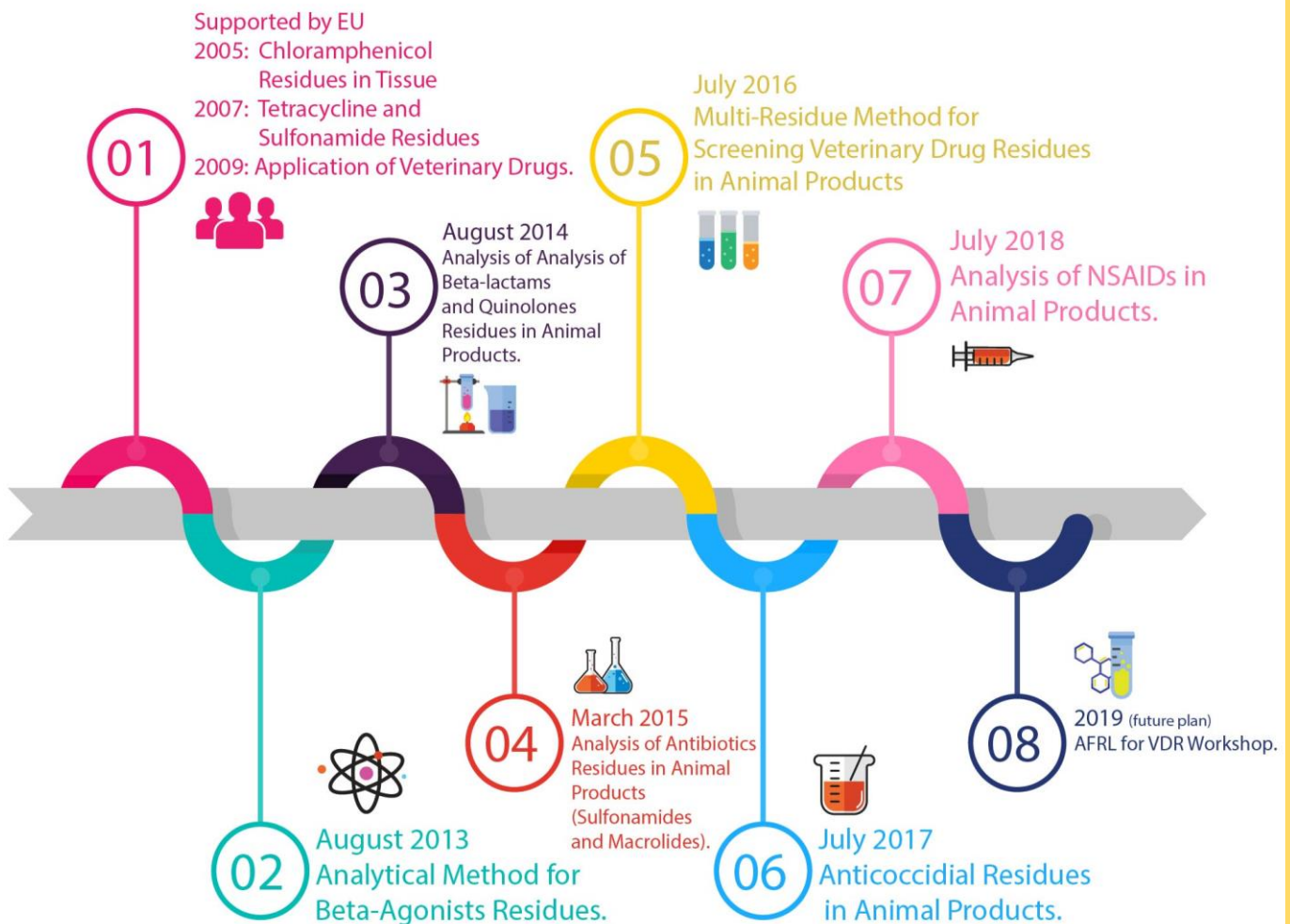
The laboratory is committed to build a strong relationship among related laboratories in ASEAN. Our network of veterinary drug residue analysis laboratories has its members from every ASEAN member states. The laboratory has been and shall continue to organize annual technical workshops and enhance collaboration with experts both at ASEAN and international levels with the core objective of improving food safety for ASEAN member states.





## AFRL for VDR Workshops

Since 2004, the laboratory organized many workshops on analysis of veterinary drug and hormone residues including for detection of beta-agonists, antimicrobial drugs and non-steroidal anti-inflammatory drugs in animal products such as meat, egg and milk. More than 70 analysts from 10 ASEAN member states participated in these workshops. Participants feedback revealed that the workshops were useful to them and shall have huge impact on their works.





## International Collaborations

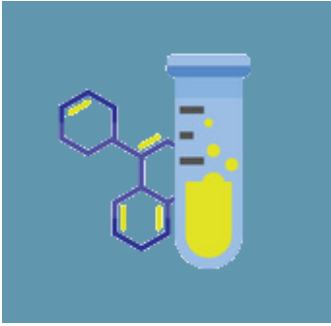
Scientists from the laboratory participated in several national and international meetings. The laboratory is having technical collaboration with national and international organizations mainly European Reference Laboratory, International Atomic Energy Agency (IAEA) and Food and Agriculture Organization of the UN (FAO).

**2016 – 2017:** Collaborative Trial - NSAIDs in milk with European Reference Laboratory

**2016 – 2019:** Two Technical Cooperation Projects with International Atomic Energy Agency

**2018 – present:** Collaboration in laboratory assessment with Food and Agriculture Organization





## Problem encountered

In the beginning, activities such as AFRL training courses (2005, 2007 and 2009) were financially supported by EU. After 2009, financial support was unsuccessfully sought from Thai government. Accordingly, no training activity could be performed by AFRL during 2010 to 2012.

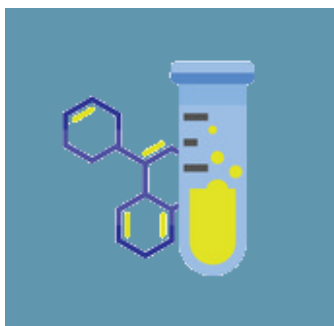
In 2013 and onward, Thai government through Department of Livestock Development, Ministry of Agriculture and Cooperatives has supported the laboratory to conduct workshops and proficiency test programme.



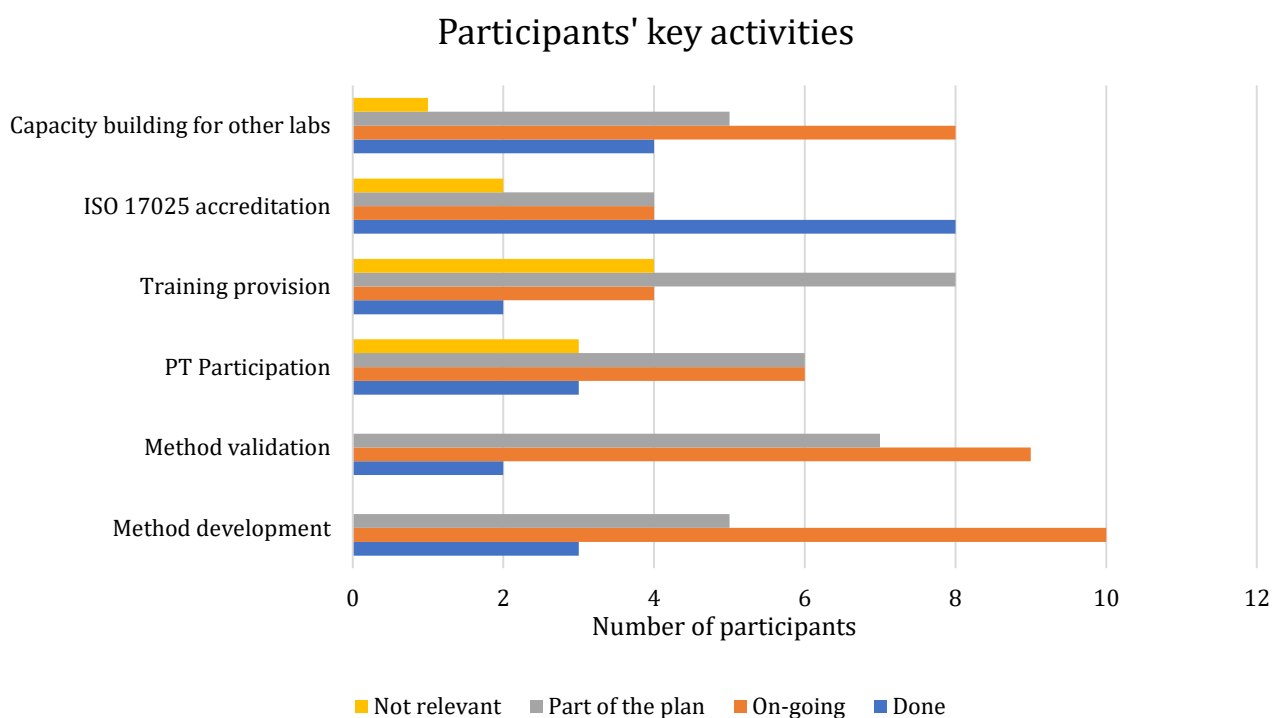
During July 2014 until April 2015, we organized a proficiency test programme on Fluoroquinolones in chicken egg. Challenges were experienced in meeting the cost of sample transportation as well as the differences in the import regulations of each ASEAN country.

Direct communication with the laboratories in the countries has also been difficult. Initially, it was undertaken only through the designated national focal point who in turn would reach out the laboratory. This led to undue delays in responses. It has also been a hurdle for direct technical communication between various experts.



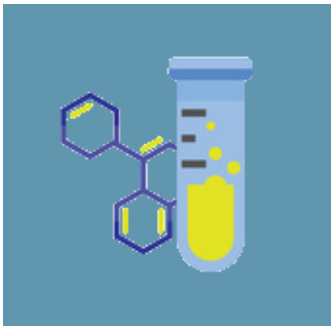


## Laboratories Achievements

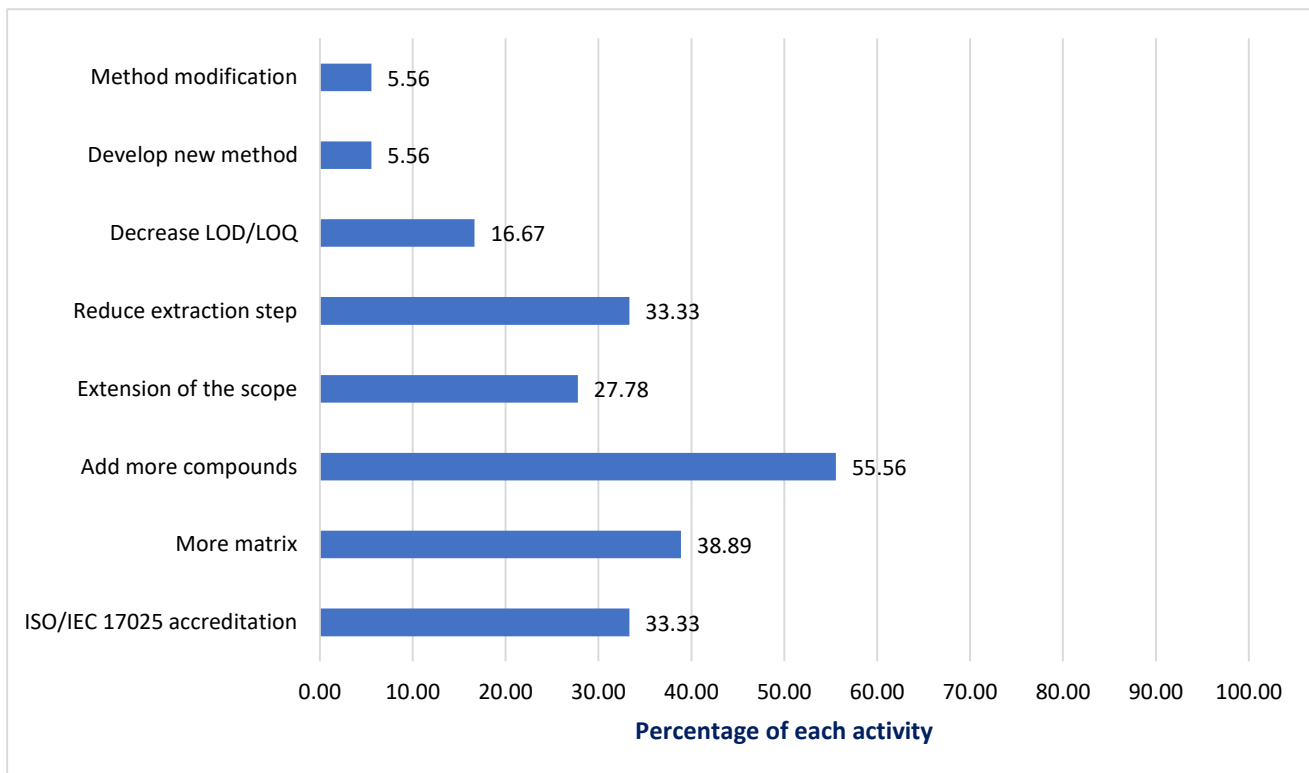


As an AFRL, several workshops and training programmes were organized during past five years. These were participated by scientists from Brunei Darussalam, Cambodia, Indonesia, Laos, Malaysia, Myanmar, Philippines, Singapore, Viet Nam and Thailand.

Moreover, participants were able to take the knowledge and experiences back to their laboratories and contributed to their countries as well. As shown in the Figure above, the key activities that have been done after the workshop including capacity building for other laboratories in their respective home countries, ISO/IEC 17025 accreditation, training provision, proficiency test participation as well as method validation and development. According to our survey, method development after our workshop participation is the most relevant activity to all participants. This could be one of the keys to strengthen food safety standard throughout the region as well detection of a larger number of drug residues.



## Laboratories Achievements



As shown in the chart, there has been an improvement in the analysis of the veterinary drug residues among the participated laboratories. More residues can be analyzed and tested. Also, the analytical method has been enhanced in term of extraction step reduction, extension to other matrices and ISO/IEC 17025 accreditation. These results show that the benefit of the workshop has affected the routine works as well as supported laboratories to achieve better analysis.

Lastly, as a member of ASEAN community, this laboratory would like to be a part that ensure the safety of our food through food testing laboratory and to produce safer food for everyone.

We also would like to extend our appreciation to ASEAN Food Testing Laboratory Committee (AFTLC) as a forerunner in food safety in South East Asia.

# ASEAN Food Reference Laboratory for Food Contact Materials

Reported by  
Nongnuch Mayteeyonpiriya  
Director of Food Products and Food Contact Materials Division

## Period of working as AFRL for FCM

2014-2018

## Location

Department of Science Service  
75/7 Rama VI Road, Ratchathewi  
district, Bangkok 10400, Thailand

## Introduction

Department of Science Service (DSS), as ASEAN Food Reference Laboratory (AFRL) for Food Contact Materials (FCM), is a government agency under the Ministry of Science and Technology, Thailand. DSS has the mission to provide high quality and professional laboratory services at the expert and reference level by employing state of the art technology, researching and developing new technologies and methods, and improving human resource development through proactive management and the concept of good governance.

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## ASEAN Laboratory Network on FCM

The members of ASEAN laboratory network on FCM are the National Food Reference Laboratories (NFRLs) who participate in the FCM training programs organized by AFRL for FCM. The list of members of the network is given in Table 1.

**Table 1. List of members under ASEAN laboratory network on FCM**

| No. | Laboratory  | Country           |
|-----|---|-------------------|
| 1.  | Food Chemistry Section/ Ministry of Health  | Brunei Darussalam |
| 2.  | Laboratory/ Cambodia Import-Export Inspection and Fraud Repression Directorate- General                       | Cambodia          |
| 3.  | Food Division/ National Quality Control Laboratory of Drug and Food/ National Agency of Drug and Food Control | Indonesia         |
| 4.  | Food and Drug Quality Control Center  | Lao PDR           |
| 5.  | Food Safety & Quality Laboratory of Selangor/ Ministry of Health  | Malaysia          |
| 6.  | Department of Food and Drug Administration  | Myanmar           |
| 7.  | Common Services Laboratory/ Toxicology Section/ Food and Drug Administration                                  | Philippines       |
| 8.  | 8.1 Laboratories Group/Veterinary Public Health Centre/ Agri-Food & Veterinary Authority of Singapore         | Singapore         |
|     | 8.2 Applied Sciences Group / Food Safety Division/ Health Sciences Authority                                  |                   |
| 9.  | Bureau of Quality and Safety of Food, Department of Medical Sciences/ Ministry of Public Health               | Thailand          |
| 10. | 10.1 National Institute for Food Control  | Viet Nam          |
|     | 10.2 Quality Assurance and Testing Centre 3 (QUATEST 3)   |                   |



## Action/ Method and Result

Since September 2014, DSS has been endorsed by ASEAN Consultative Committee on Standards and Quality – Prepared Food Products Working Group (ACCSQ-PFPWG) to represent as ASEAN Food Reference Laboratory (AFRL) for Food Contact Materials (FCM). According to ToR for AFRL, DSS has provided technical support and knowledge transfer to NFRLs of ASEAN member states through key activities such as training programs, proficiency testing (PT) schemes, and sharing information for reference materials/certified reference materials, etc. These activities aimed to strengthen the capability of testing laboratories in the area of FCM and to promote the safety of FCM among ASEAN region. The important activities provided by AFRL for FCM are as follows:

### Survey of training needs and PT needs in ASEAN

AFRL for FCM conducted the need-assessment survey in 2015 to collect the information for preparing the training and PT programs concerning FCM. There were 11 laboratories from 8 countries including Brunei Darussalam, Cambodia, Indonesia, Lao PDR, Malaysia, Myanmar, Singapore, and Viet Nam, which responded to this survey. The summary of training and PT needs on FCM are given in table 2 and 3 respectively.

Table 2. Summary of training needs on FCM in ASEAN

| No. | Training topic                                   | No. of Countries                     | Laboratory |
|-----|--|--------------------------------------|------------|
| 1.  | Migration of bisphenol A from drinking equipment | 6 (exc. Brunei, Indonesia)           | 9          |
| 2.  | Pb and Cd in plastic material                    | 6 (exc. Brunei, Indonesia)           | 9          |
| 3.  | Migration of melamine from melamine wares        | 5 (exc. Brunei, Indonesia, Malaysia) | 8          |
| 4.  | Trace elements released from metal/ metal alloy  | 5 (exc. Brunei, Laos, Myanmar)       | 7          |
| 5.  | Pb and Cd released from ceramic ware             | 5 (exc. Brunei, Indonesia, Malaysia) | 6          |
| 6.  | Sodium oxide leaching from glass grains          | 3 (Indonesia, Singapore, Vietnam)    | 3          |

Table 3. Summary of PT needs on FCM in ASEAN.

| No. | PT scheme                                 | No. of Countries                              | Laboratory |
|-----|---|---|------------|
| 1.  | Heavy metals in Food Simulant (plan 2016) | 7 (exc. Brunei)                               | 9          |
| 2.  | Melamine in Food Simulant (plan 2016)     | 5 (exc. Brunei, Laos, Myanmar)                | 7          |
| 3.  | Bisphenol A in Food Simulant              | 5 (exc. Brunei, Laos, Indonesia)              | 7          |
| 4.  | Formaldehyde in Food Simulant             | 4 (exc. Brunei, Laos, Malaysia and Singapore) | 7          |
| 5.  | Heavy metals released from ceramic ware   | 5 (exc. Brunei, Indonesia, Singapore)         | 5          |
| 6.  | Heavy metals in Plastic                   | 3 (Cambodia, Myanmar, Vietnam)                | 6          |

\* exc = excluding

## Organizing ASEAN FCM Training Programs

All FCM training programs took place at DSS, Bangkok, Thailand. The topics of training were mainly determined through ASEAN survey of training needs in 2015 (see table 2). The details of the training programs organized by AFRL for FCM are shown in table 4.

Table 4. List of FCM training programs organized by AFRL for FCM.

| Topic   | Date             | Participant  |
|---|------------------|--|
| 1. Migration of Melamine from Melamine Wares                            | 21-24 June 2016  | 7 countries: Cambodia, Indonesia, Myanmar, Philippines, Singapore, Thailand and Viet Nam                             |
| 2. Migration of Bisphenol A from Food Contact Materials                 | 6-10 March 2017  | 7 countries: Cambodia, Indonesia, Lao PDR, Malaysia, Singapore, Thailand and Viet Nam                                |
| 3. Analysis of Plasticizers in Food Contact Materials and Food Products | 19-23 March 2018 | 10 countries: Brunei, Cambodia, Indonesia, Lao PDR, Malaysia, Myanmar, Philippines, Singapore, Thailand and Viet Nam |



**“ASEAN  
Training  
program  
on FCM  
organized by  
AFRL  
for FCM at  
DSS.”**



## Providing ASEAN PT Schemes on FCM

The list of PT schemes provided by AFRL for FCM is given in table 5. The PT topics were chosen according to ASEAN survey of PT need in 2015 (see table 3). The participants were not only NFRLs but also non-NFRLs and some laboratories outside ASEAN. In overview, not less than 60% of the participating laboratories are satisfactory with z-score between -2.0 to 2.0.



Table 5. List of PT schemes provided by AFRL for FCM.

| Year | Topic  | Period                    | Participant   | % $ Z  \leq 2.0$ |
|------|--|---------------------------|---|------------------|
| 2015 | Cd and Pb released from ceramic ware   | October 2014 – April 2015 | 17 laboratories including Malaysia (1), Singapore (1), South Korea (1), Spain (1), Thailand (11), and Viet Nam (2)                          | More than 90%    |
|      | Cd and Pb in Plastic   | May – July                | 28 laboratories including Brunei Darussalam (1), Indonesia (1), Myanmar (3), Philippines (1), Singapore (1), Thailand (19) and Viet Nam (2) | More than 60%    |
| 2016 | Melamine in Food Simulant (3% acetic acid)   | January – March           | 16 laboratories including Brunei Darussalam (1), Myanmar (2), Thailand (11) and Viet Nam (2).   | 60%              |
|      | Heavy metals (Ba, Co, Cu, Fe, Ge, Li, Mn, Sb and Zn) in Food Simulant (3% acetic acid) | April – July              | 30 laboratories including Brunei Darussalam (1), Myanmar (3), Thailand (24) and Viet Nam (2).   | More than 75%    |
| 2017 | Bisphenol A in food simulant (3% acetic acid)  | January – April           | 12 laboratories including Malaysia (1), Myanmar (2), Philippines (1), Thailand (7) and Viet Nam (1).  | 91.7%            |
|      | Cd and Pb in Plastic   | April - July              | 24 laboratories including Myanmar (2), Philippines (1), Thailand (19) and Viet Nam (2).   | More than 60%    |
| 2018 | Formaldehyde in Food Simulant (3% acetic acid)   | February – May            | 15 laboratories including Myanmar (1), Philippines (1), Thailand (12) and Viet Nam (1)  | 93.3%            |
|      | Heavy metals (Ba, Co, Cu, Fe, Ge, Li, Mn, Sb and Zn) in Food Simulant (3% acetic acid) | May – August              | 28 laboratories including Hong Kong (1), Myanmar (2), Philippines (1), Singapore (1), Thailand (21) and Viet Nam (2)                        | More than 89%    |

Cd and Pb in Plastic



Cd and Pb released from ceramic ware



## Supporting Technical Information on FCM

There were some requests from the members of ASEAN laboratory network for providing technical assistance about FCM. DSS as AFRL for FCM, therefore, provided the technical consulting to the members to resolve their issues. Most of the required assistance was focused on regulations, standards and testing of FCM. The overview of requirements for supporting technical information are presented in table 6.

Table 6. Requirements for providing technical information from ASEAN laboratory network.

| No. | Issue                          | Country           | Frequency |
|-----|--------------------------------|-------------------|-----------|
| 1.  | Regulations/ Standards for FCM | Philippines       | 3         |
|     |                                | Viet Nam          | 1         |
| 2.  | Methods/Testing of FCM         | Brunei Darussalam | 1         |
|     |                                | Malaysia          | 2         |
|     |                                | Viet Nam          | 3         |

## Problems and Obstacles Encountered

Some ASEAN laboratories encountered some difficulties to develop and implement test methods in which they were trained by AFRL for FCM. Their main problem was the lack of laboratory personnel and sophisticated analytical instruments. The other obstacle for some laboratories was that their governments have no policy or inadequate budget to support all the expenses for the staff to participate in a training abroad. This can result in losing the chance to learn from the training of those countries due to the absence of delegates while the host has limited budget.

## Impact/ Achievement

The impact of AFRL for FCM on NFRLs can be evaluated from several outcomes e.g. improvement in PT results, extension of scope under ISO/IEC 17025 accreditation, developing of new test items according to the methods learnt from training programs, etc. However, the evaluation has not been carried out since it shall be done in 2019 (after 5 years of being AFRL) referring to “Mechanism Procedure for Monitoring the Performance of AFRLs”. In this regard, the impact analysis of AFRL for FCM on the performance of NFRLs will be updated in the 5-year activity report.

## Lesson Learned

There are some points that have been learned from experiences of performing the key activities of AFRL for FCM since 2014. As mentioned in section 7.5, some of ASEAN member countries have the issues with inadequate personnel and equipment, which can be the obstacle to implement the test methods learning from the FCM training programs at their laboratories. However, from the training provider's perspectives, the knowledge and technical information gained from the trainings can be applied to improve their analytical work. In addition, the training program may not only focus on the laboratory practical work but also the principle and theory of analytical method as well. Another issue is that some countries require longer period (more than 1 month) to approve their delegates for participating the training abroad. Therefore, the host country should share the invitation letter early to ensure that the delegates have enough time to process on the administrative permission.

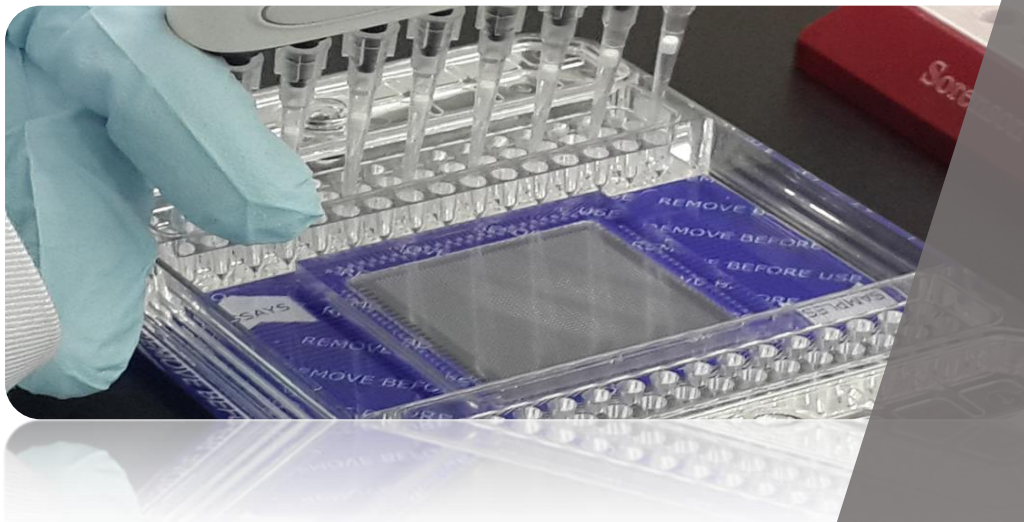
# ASEAN Food Reference Laboratory for GMO

DR. YUVANESWARI CHANDRAMOULEE SWARAN  
GMO LABORATORY, DEPARTMENT OF CHEMISTRY MALAYSIA

## INTRODUCTION

The Department of Chemistry Malaysia (DOC) has been the ASEAN Food Reference Laboratory (AFRL) for GMO testing since 2004 and the National Reference Laboratory for GMO testing. Since then, the DOC, a government laboratory under the Ministry of Energy, Science, Technology, Environment and Climate Change, has carried out various activities such as trainings, workshops and Proficiency Testing Service for National Reference Laboratories (NRLs) of ASEAN member states (AMSs) and Reference Laboratories in Malaysia. The department aims to provide efficient scientific services to ensure societal well-being through the highest level of competency, impartiality, professionalism, integrity and confidentiality. The GMO laboratory routinely analyzes samples to check for compliance under the Malaysian Food Act 1983 and the National Biosafety Act 2007. Food samples for export are also tested to establish the absence of GMO in these products. Detection Methods for new GMO events and research using state-of-the-art instruments are also regularly carried out in the laboratory.

“LEADER IN SCIENTIFIC SERVICES  
FOR  
THE NATION’S WELL BEING”



## ACTIVITIES

For the past 5 years, several training programs were carried out for laboratories in ASM, international laboratories and all reference laboratories in Malaysia as part of the AFRL initiative to strengthen the capabilities of testing laboratories by transfer of knowledge. AMS who participated in these training sessions were Vietnam, Lao PDR, Philippines and Malaysia, while countries outside of ASEAN who participated were Yemen, China, India, Iran, Iraq, Lebanon, Republic of Korea, Mongolia, Bangladesh and Bhutan.

Some of the trainings that were carried out were GMO attachment trainings for new officers, Method validation and Measurement Uncertainty Workshops and Asia-Pacific Workshop on the Detection and Identification of Living Modified Organisms. Besides training sessions, seminars, symposiums and road shows are also carried out by the DOC. This not only helps create awareness among the public on the issues of GMO in food but also provides an avenue for DOC to promote its roles and activities.



The department's technical personnel are regularly sent for training to enhance their technical skills and learn new methods. Some of the trainings these personnel have attended are ASEAN PT training workshop on ISO/IEC17043:2010 in Bangkok, attachment trainings in Food Research Institute, Japan and Food and Drug Administration, Taiwan, and introduction to new technologies organized by various organizations in Malaysia.

All these new methods and skills are then transferred to other DOC personnel, NRLs and RLs during trainings and workshops organized by DOC.

As part of the AFRL Terms of reference, the DOC organizes PT schemes for other GMO laboratories in AMS and in Malaysia. Participating in PT programs is a requirement for laboratories accredited to ISO/IEC 17025.

Three (3) PT schemes have been provided since 2014 which were Soya and Maize Flour (2014), Soya Grit (2016) and Feed (2018). Countries that had participated in these PT schemes were Viet Nam, Thailand, India, Malaysia and Philippines. A summary of the PT results obtained from participating laboratories based on parameters tested are shown in Image 1.

The PT results obtained for 2018 is currently being analyzed and the final report will be published early 2019.

For laboratories that had obtained unsatisfactory results in the PT schemes, the DOC had assisted these laboratories by providing technical advice and supplying test samples of primers, probes and reference materials in order to troubleshoot the problem that may have contributed to their unsatisfactory results.

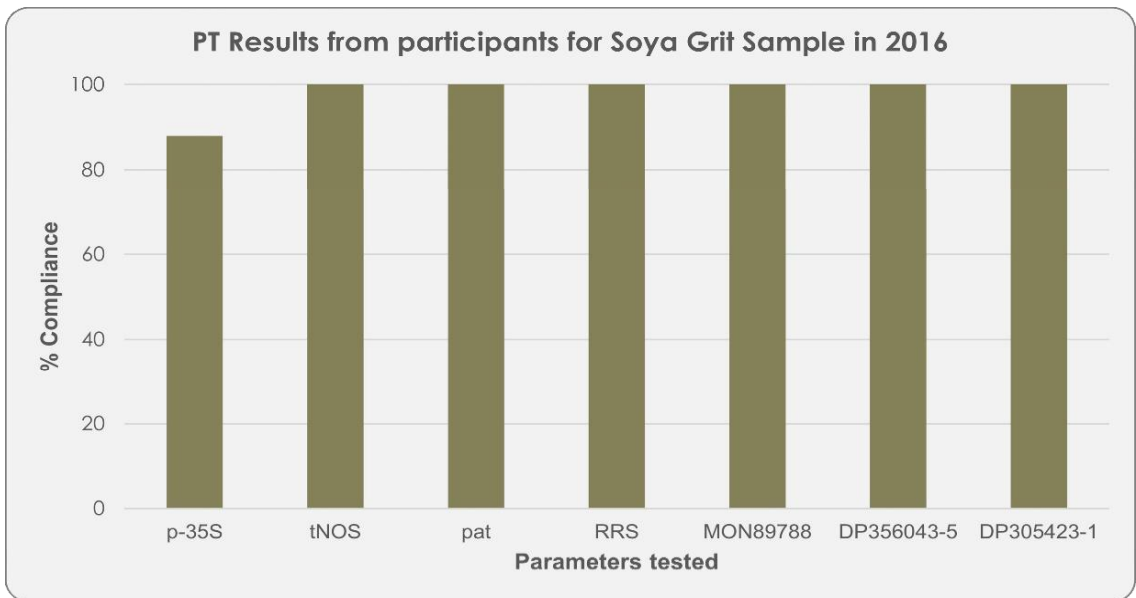
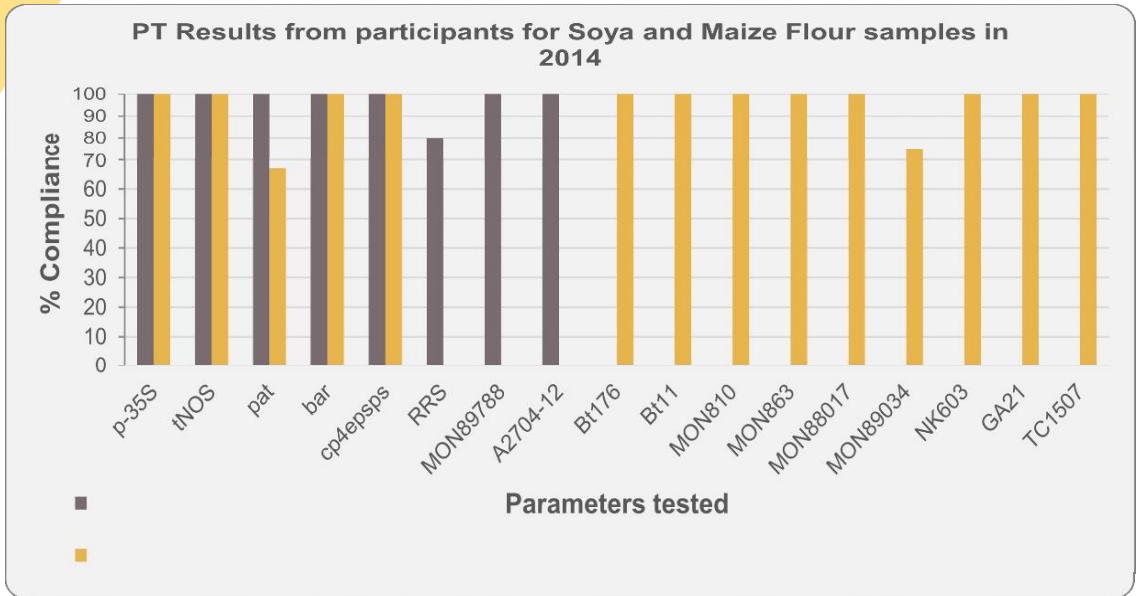
These laboratories were then re-tested in the next PT round to ensure that the problem has been rectified.





As an AFRL, method development is an integral part of our activities in the laboratory. Some of the new methods that have been developed are detection methods for Soya, Maize, Canola, Cotton and Potato events using Real-Time PCR. New detection methods for genetically modified bacteria and Zebrafish are also currently being developed in the DOC.





**Fig 1: Proficiency Testing results submitted by participants for Soya and Maize Flour samples in 2014 and Soya Grit sample in 2016.**

## ACHIEVEMENTS

The DOC is an ISO/IEC 17025 accredited laboratory and in 2017 successfully obtained ISO/IEC 17043 accreditation status as a Proficiency Testing Provider. As a laboratory providing Proficiency testing services for many testing schemes including GMO, this accreditation ensures that all PT schemes are fit for purpose and provides a consistent basis for PT participating laboratories to determine the competency of the DOC to provide proficiency testing.

In 2017, the DOC in collaboration with the United Nations Environment Program conducted a Workshop entitled 'Asia-Pacific Workshop on the Detection and Identification of Living Modified Organism'. A total of 15 participants from India, China, Mongolia, Yemen, Lebanon, Iran, Iraq, Bangladesh, Philippines, Lao PDR, Bhutan, Republic of Korea and Malaysia attended this workshop. The objectives of this workshop were to provide theoretical and hands-on training on laboratory methodologies used for the analysis of test samples as well as to share experiences and assess national needs and gaps for the effective implementation of the relevant outcomes under the Strategic Plan for the Cartagena Protocol.

## CHALLENGES FACED

One of the major challenges is the availability of funds to carry out training programs for AMS. When AFRL for GMO was first established in 2004, all training courses were supported financially by the EU. This support ended in 2009 and it has been increasingly difficult to obtain financial aid for the provision of training to AMS.

Training programs carried out at the DOC is by request from AMS with all the expenses borne by the participating countries.

Establishing direct communication with the representatives of the GMO laboratories is also another challenge faced by AFRL for GMO. The current practice is to send e-mails via the National Focal points but this takes time for the e-mail to reach the respective GMO laboratory representatives. This problem could be solved by having a communication network of representatives from all GMO laboratories in ASM.

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## 12<sup>th</sup> ASEAN FOOD TESTING LABORATORY COMMITTEE MEETING

### Host Country Report

The 12th ASEAN Food Testing Committee (AFTLC) Meeting was hosted by Malaysia and was held on 27-28 April 2018 at the Langkawi International Convention Centre, Langkawi, Kedah. A total of 25 representatives from Brunei Darussalam, Cambodia, Indonesia, Lao PDR, Malaysia, Myanmar, Philippines, Singapore, Thailand, Viet Nam and ASEAN Secretariat attended this meeting. The agenda of the meeting included the yearly progress report presentation by 9 ASEAN Food Reference Laboratories (AFRL), establishment of new AFRL on radionuclide by Malaysia and the extension of scope for mycotoxin to include phytotoxin by Singapore. The proposal to publish a yearly bulletin was also discussed and Thailand, Malaysia and Philippines were given the task to contribute and coordinate the development of the 1<sup>st</sup> AFTLC bulletin. On the second day of meetings, the delegates were treated to a poolside welcome dinner with traditional dances and fire shows. The meeting was a huge success, thanks to the Ministry of Health Malaysia as the organizers, and to all the delegates who actively participated in the deliberations of the meeting.





## 13<sup>th</sup> ASEAN FOOD TESTING LABORATORY COMMITTEE MEETING

*Host Country Report*



Myanmar hosted 13<sup>th</sup> AFTLC meeting of the ASEAN Food Testing Laboratories Committee (AFTLC) on 23<sup>rd</sup> -24<sup>th</sup> Nov 2018, at Mercure Mandalay Hill Resort, Mandalay city. This meeting was organized back to back with PFPWG and its related meetings. The opening ceremony of the AFTLC was attended by Union Minister of Ministry of Health and Sports and Chief minister of Mandalay region. Subsequently, a gala dinner was held at the pool-side.

The Meeting was chaired by Mr. Tran Cao Son, Head, Food Toxicology and Food Allergy Testing Laboratory, National Institute for Food Control, Ministry of Health, Viet Nam and vice-chaired by Pg Hjh Sofiah Binti Pg Hj Bakar, Chief Scientific Officer, Department of Scientific Services, Ministry of Health, Brunei Darussalam.



The Meeting was attended by delegates from Brunei Darussalam, Cambodia, Indonesia, Malaysia, Myanmar, Singapore, Thailand, Viet Nam and the ASEAN Secretariat. The representatives from the Physikalische-Technische Bundesanstalt (PTB), Germany were in attendance for the open session.

The meeting discussed several important topics of AFTLC including those arising from the previous 12th AFTLC meeting and 5-year performance of the existing AFRL. Participating countries presented brief reports and these included AFRL for genetically Modified Organisms (Malaysia); AFRL for mycotoxin (Singapore); AFRL for Pesticide residues (Singapore); AFRL for Heavy metals and Trace elements (Thailand); AFRL for VDR (Thailand); AFRL for Microbiology (Vietnam). Reports from Non-AFRLs Members (Brunei Darussalam, Cambodia, Myanmar and Philippines) were also presented on their activities on food safety.

The meeting also discussed the contents of the Bulletin, its editorial board, publishing of the bulletin and revision of the AFTLC manual. Furthermore, the meeting considered establishment of new AFRLs for radionuclides, extension of scope of AFRL for mycotoxin to include phytotoxin, mapping of food safety testing laboratory network in AMS.

The participants agreed to form a panel of experts for the on-site visit to the AFRL for mycotoxins and discussed about the support for food safety testing activities in ASEAN, including technical assistance and training needs, future cooperation with PTB Germany and development of AFTLC bulletin.

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